

REMARKS

With the foregoing amendment claims 1-5, 7-9, and 12-30 are pending in the application. Claims 1, 3 and 16 are independent. No new matter has been added by the amendments. Applicants respectfully request reconsideration of the present application.

Rejection of Claims based on Bacs (US 5,678,089)

Claims 1, 2, 4, 5, 7-9 and 16-20 and 25 stand rejected under 35 U.S.C. § 102 as being anticipated by Bacs (US 5,678,089). Applicant respectfully traverses.

Independent Claim 1:

With respect to claim 1, claim 1 is not anticipated by Bacs because Bacs does not disclose all of the features of claim 1 as amended herein. For example, at the least, Bacs does not disclose:

A digital image capturing device ... comprising ...
a processor that ... records on a storage device only a
single image of the object as a result of the
complete application of the exposure pattern.

as is recited in claim 1.

As discussed previously, Bacs discloses an autostereoscopic camera that uses a “parallax scanning pattern” to record a plurality of images. When these plurality of images are successively displayed, the succession of images produce an autostereoscopic image of said object on a conventional, two-dimensional display. For example, the Abstract of Bacs states, “**Images** of a scene being photographed, as viewed through the lens aperture in its various disparity positions, are recorded for subsequent display, which produces a three dimensional illusion when viewed on a conventional display with the unaided eye.” *Bacs Abstract* (emphasis added). Throughout the entire disclosure of Bacs, Bacs makes clear that **more than one image** is recorded as a result of the complete excursion of the “parallax scanning pattern.” For example Bacs states,

To achieve these objectives and advantages, the improved
single-camera autostereoscopic imaging method of the

present invention comprises the steps of providing an imaging lens having an optical axis directed toward a scene, providing a lens aperture, moving the aperture relative to the lens in a parallax scanning pattern through diverse disparity points displaced from the optical axis of the lens, **generating a succession of time-spaced images of the scene** as viewed through the aperture from a plurality of the disparity points, and **recording the images**.

Bacs, col. 3, ll. 19-29 (emphasis added).

The Office's assertion that Bacs discloses recording "a single image of the object as a result of the complete application of the selected exposure pattern" has no merit. In support of its assertion, the Office cites to col. 10, lines 14-23, which is reproduced below.

It is believed that the display quality of the autostereoscopic scene image can be enhanced by executing parallax scanning motion of the lens aperture 30 intermittently, that is, only while the camera shutter is open, rather than continuously. In this case, controller 88 of FIG. 7 would control actuator 34 to move lens aperture 30 along a segment of a particular parallax scanning pattern while the camera shutter is open to record a scene image and then halt the lens aperture scanning motion as the camera shutter closes. When the shutter opens again, the lens aperture is scanned along the next segment of the parallax scanning pattern and stopped when the shutter closes again. It will be appreciated that, to maintain a desired lens aperture parallax scanning pattern rate, the speed of the lens aperture motion along each parallax scanning pattern segment will have to be at a greater speed than the movement of the lens aperture during the continuous scanning approach. This intermittent scanning approach eliminates the gaps in the image frame recordings that occur when the lens aperture parallax scanning motion is continuous. When the image frames are displayed, any foreground and background motion will appear continuous. *Col. 10, lines 14-35 (emphasis added).*

The above portion of Bacs does not disclose recording "a single image of the object as a result of the complete application of the selected exposure pattern." Rather, it discloses recording a first scene image by moving "lens aperture 30 along a first segment (i.e., a

fragment or portion) of a particular parallax scanning pattern while the camera shutter is open ...,” and recording a second scene image when the shutter opens again by scanning the lens aperture “along the next segment.” Thus, upon the complete application of the parallax scanning pattern (i.e., after all segments are scanned) the camera will have recorded more than one image frame! In fact, the above portion of Bacs explicitly states that “image **frames**” are captured (i.e., more than one image frame is captured). *Col. 10, lines 33-34* (“When the image **frames** are displayed, any foreground and background motion will appear continuous.”).

Thus, Bacs does not disclose recording “a single image of the object as a result of the complete application of the selected exposure pattern.” Hence, Bacs does not anticipate claim 1. The rejection of claim 1, therefore, should be withdrawn, as well as the rejection of the claims that depend from claim 1.

Independent Claim 16 and Dependent claims 17-19 and 25-28:

With respect to claim 16, the above remarks for claim 1 apply because, like claim 1, claim 16 requires, “a processor that ... records on a storage device only a single image of the object as a result of the complete application of the selected exposure pattern.” Accordingly, the rejection of claim 16 and the claims that depend therefrom should be withdrawn.

Rejection of Claims based on Kleinberger (US 5,822,117)

Claims 3 and 12-14 stand rejected under 35 U.S.C. § 102 as being anticipated by Kleinberger (US 5,822,117). Applicant respectfully traverses.

With respect to claim 3, claim 3 is not anticipated by Kleinberger because Kleinberger does not disclose all of the features of claim 3. For example, at the least, Kleinberger does not disclose an “electronic imaging sensor device having ... pixel sensors,” as is required by claim 3.

The Office contends that element 1 shown in FIG. 14 is an “electronic imaging sensor.” This contention lacks merit. Element 1 is nothing more than a “display.” *See col. 31, lines 35-38* (“Display 1 is divided into multiple subregions ...”). Kleinberger explicitly defines the term “display” at *col. 6, lines 52-65*. The term “display” is defined as “a medium

by which an image ... is initially presented. Suitable displays include but are not limited to display screens” *col. 6, lines 52-65*. Nowhere does Kleinberger define a “display” as “an electronic imaging sensor ... having pixel sensors.” Accordingly, Kleinberger does not disclose all of the features of claim 3. Hence, the rejection of claim 3 should be withdrawn.

New claims 29-30


With respect to new claim 29, new claim 29 depends from claim 3 and, therefore, is patentable for at least the same reasons give above with respect to claim 3. Additionally, claim 29 requires that the electronic imaging sensor is a CCD sensory array or a CMOS sensor array. As stated above, Kleinberger does not disclose an electronic imaging sensor, let alone a CCD sensor array or a CMOS sensor array. For this additional reason, claim 29 is patentable over Kleinberger.

With respect to new claim 30, new claim 30 depends from claim 3 and, therefore, is patentable for at least the same reasons give above with respect to claim 3. Additionally, claim 30 requires “a shutter button; ... and a processor coupled to the shutter device, the electronic imaging sensor, the shutter button, and the memory, wherein the processor is configured to receive an input from the shutter button and, in response to receiving the input, control a shuttering operation of the shutter device.” Kleinberger does not disclose such a processor. For this additional reason, claim 29 is patentable over Kleinberger.

CONCLUSION

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding objections and rejections, and that they be withdrawn. Applicant believes that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

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